TRAIL FORTRESS

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Rough Country 51142 Installation Instructions

2.5-Inch Lift Kit for 2021-2025 Ford F-150 Raptor 4WD

Part number: 51142

trailfortress.com/rough-country-2-5-inch-lift-kit-51142

Scan for fitment, price and install help



FORD 2021-24 Raptor Leveling Kit

Thank you for choosing Rough Country for your suspension needs.

Rough Country recommends a certified technician installs this system. In addition to these instructions, professional knowledge of disassemble/reassembly procedures as well as post installation checks must be known. Attempts to install this system without this knowledge and expertise may jeopardize the integrity and/or operating safety of the vehicle.

Please read all the instructions before beginning the installation. Check the kit hardware against the parts list. Be sure you have all the needed parts and understand where they go. Also please review the tools needed list and make sure you have needed tools.

PRODUCT USE INFORMATION

⚠WARNING As a general rule, the taller a vehicle is the easier it will roll. We strongly recommend seat belts and shoulder harnesses should be worn at all times. Avoid situations where a side rollover may occur.

Braking performance and capabilities are decreased when significantly larger/heaver tires and wheels are used. Take this into consideration while driving. Also, speedometer recalibration is necessary when larger tires are installed.

Do no add, alter, or fabricate any factory or after-market parts which increase vehicle height over the intended height of the Rough Country product purchased. Mixing component brands, lifts, and/or combining body lift with suspension lifts voids all warranties. Rough Country makes no claims regarding lifting devices and excludes any and all implied claims. We will not be responsible for any product that is altered.

If you desire a different look or if the vehicle has a tool box or added weight in the rear, please consult with your sales representative about block / u-bolt options.

The 2.5” kit was developed for a **37 x 12.5 - 17** tire on the factory 17” wheel or an aftermarket 17x9 wheel with a -12mm offset

⚠NOTICE

NOTICE TO DEALER AND VECHICLE OWNER

Any vehicle equipped with any Rough country product must have the “Warning to Driver” decal installed on the sun visor or dash. The decal is to act as a constant reminder for whoever is operating the vehicle of its unique handling characteristics. **INSTALLING DEALER**—It is your responsibility to install the warning decal and to forward these installation instructions on too the vehicle owner for review and to be kept in the vehicle for its service life.

Torque Specs:

Size	Grade 5	Grade 8	Size	Class 8.8	Class 10.9
5/16”	15 ft/lbs	20ft/lbs	6MM	5ft/lbs	9ft/lbs
3/8”	30 ft/lbs	35ft/lbs	8MM	18ft/lbs	23ft/lbs
7/16”	45 ft/lbs	60ft/lbs	10MM	32ft/lbs	45ft/lbs
1/2”	65 ft/lbs	90ft/lbs	12MM	55ft/lbs	75ft/lbs
9/16”	95 ft/lbs	130ft/lbs	14MM	85ft/lbs	120ft/lbs
5/8”	135ft/lbs	175ft/lbs	16MM	130ft/lbs	165ft/lbs
3/4”	185ft/lbs	280ft/lbs	18MM	170ft/lbs	240ft/lbs

trailfortress.com/rough-country-2-5-inch-lift-kit-51142

Kit Contents

51142BAG1
- 8 - 6mm x 30mm Socket Head Bolt
- 2 - 6mm x 15mm Button Head Bolt
- 2 - Cable Clamp
- 2 - Rear Spacer Plate
- 2 - 3/8” x 2 3/4” Bolt
- 2 - 3/8” Flat Washer

4 - Front Preload Spacer Half
4 - Front Strut Top Plate
2 - Rear Spacer

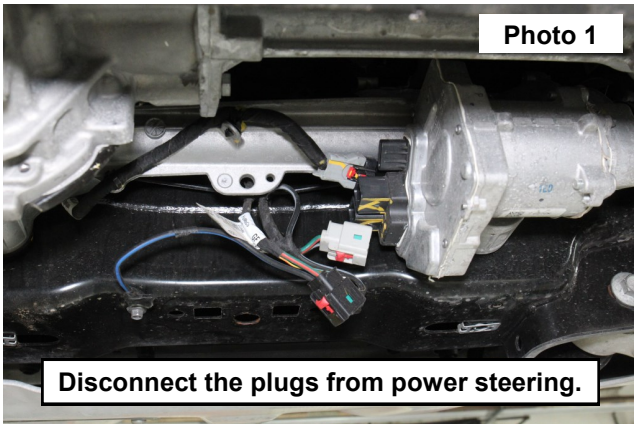
Tools Needed:

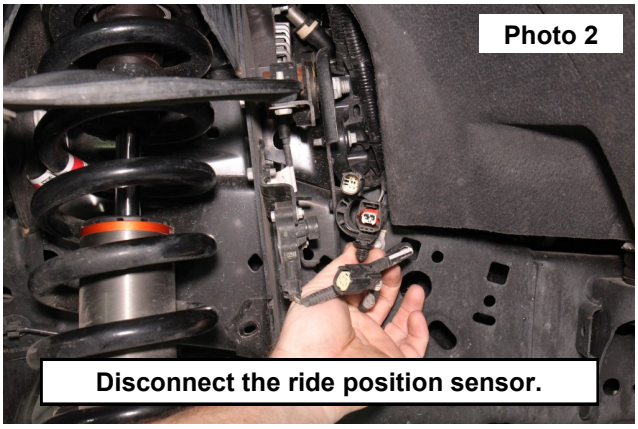
Plyers
Paint Pen
11mm Socket
13mm Socket
15mm Socket
18mm Socket
21mm Socket
30mm Socket
1-16” Wrench
Strut Compressor



FRONT INSTALLATION INSTRUCTIONS

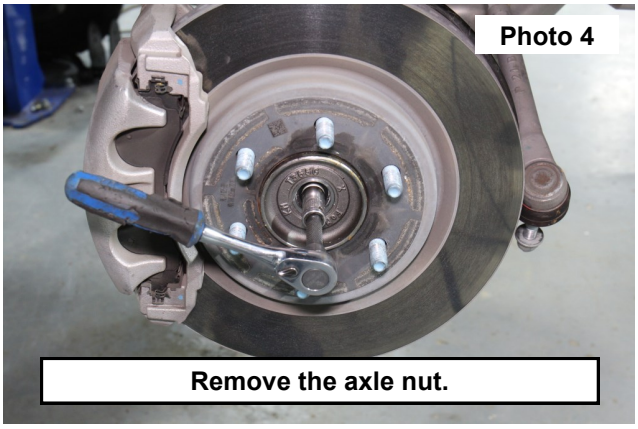
1. Disconnect the plugs from power steering rack. **See Photo 1.**
2. Disconnect the ride position sensor. **See Photo 2.**



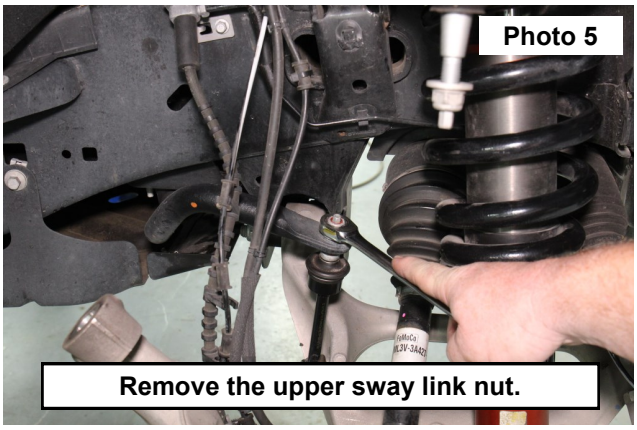


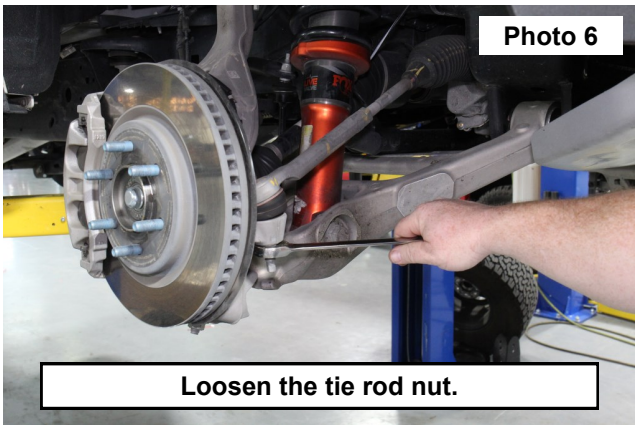
3. Remove the axle nut dust cap. **See Photo 3.**
4. Remove the axle nut using a 13mm socket. **See Photo 4.**



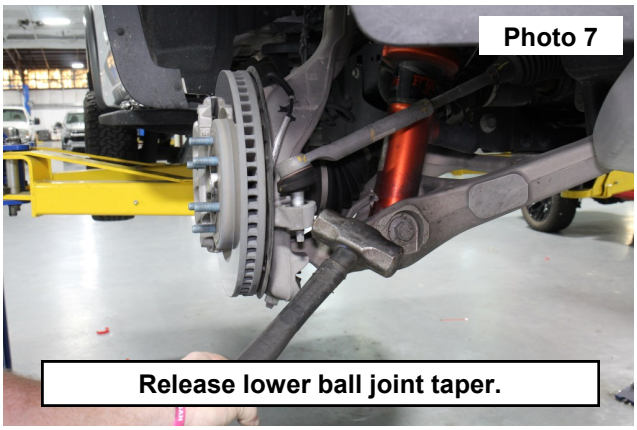


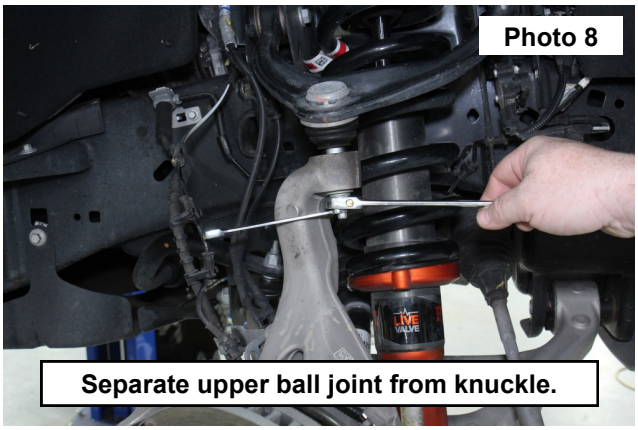
5. Remove upper sway link nut using a 18mm wrench. **See Photo 5.**
6. Loosen the tie rod end nut using a 21mm wrench. **See Photo 6.**



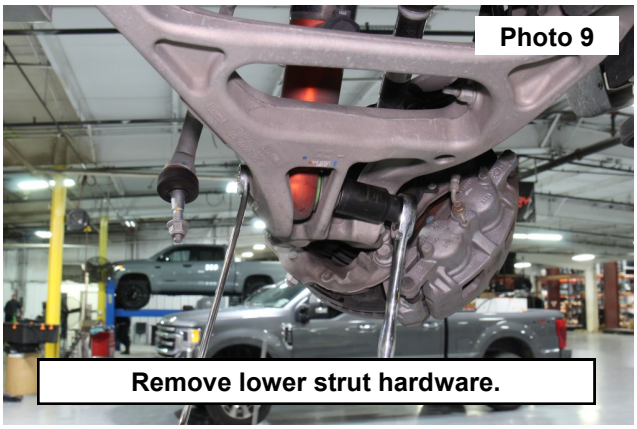


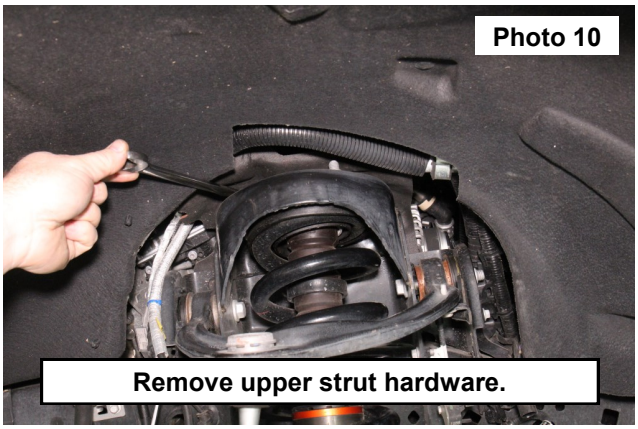
7. Unseat the tie rod end taper using a hammer on the end of the knuckle boss. **See Photo 7.**
8. Loosen the upper control arm nut using a 18mm wrench unseat the ball joint taper using a hammer on the knuckle boss, then remove the ball joint nut. **See Photo 8.**



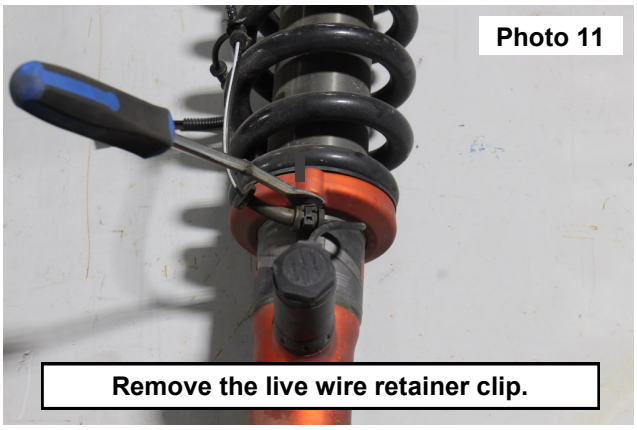


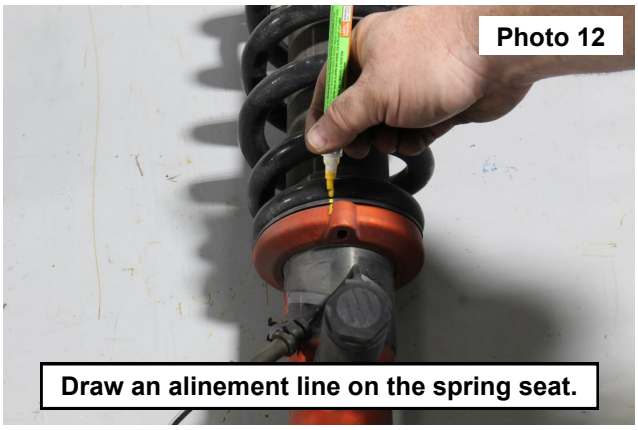
9. Remove the lower strut bolt using a 30mm socket and a 1”-1/16” wrench. **See Photo 9.**
10. Remove the (3) upper strut nuts using a 18mm wrench. **See Photo 10.**



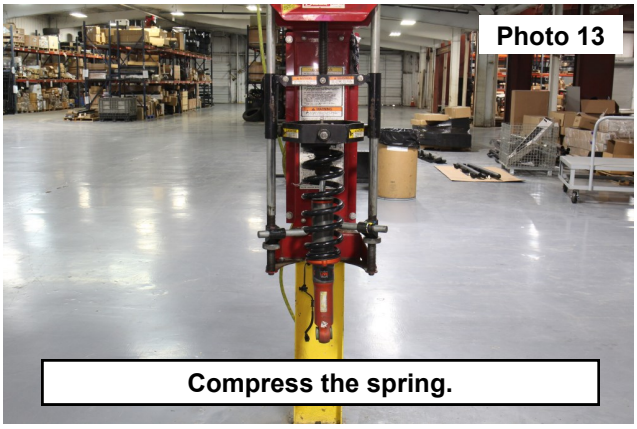


11. Using a pry tool remove the live wire retainer from the coil spring seat. **See Photo 11.**
12. Draw an alinement line on the coil spring and the spring seat. Use a Pant pen of a light color. **See Photo 12.**



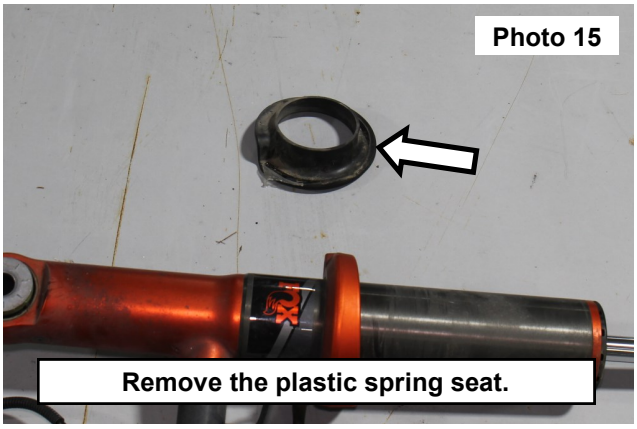


13. Compress the spring using a compressor tool. **See Photo 13.**
14. Remove the upper strut nut using a 17mm socket. **See Photo 14.**



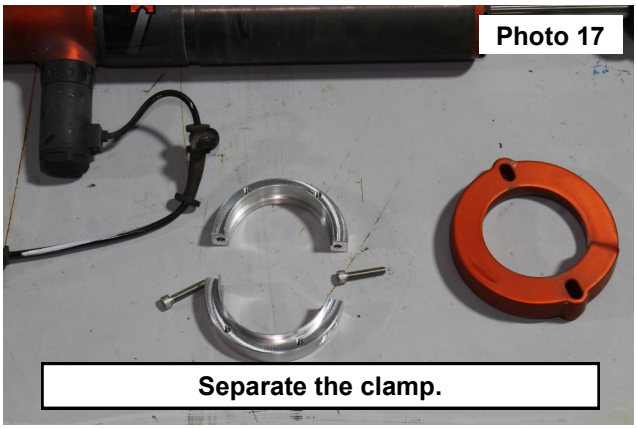


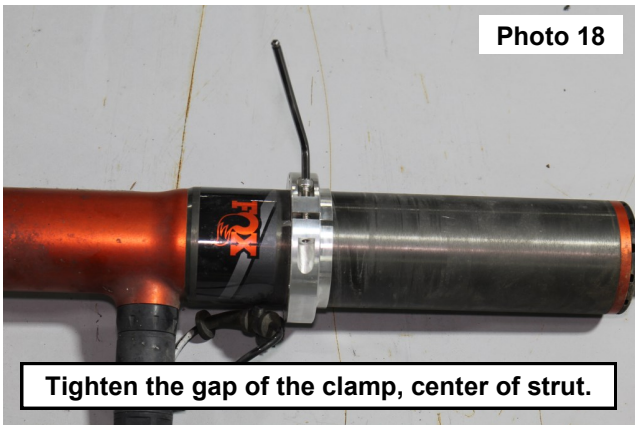
15. Remove the plastic spring seat. **See Photo 15.**
16. Remove the OE aluminum spring seat along with the inner retainer. **See Photo 16.**



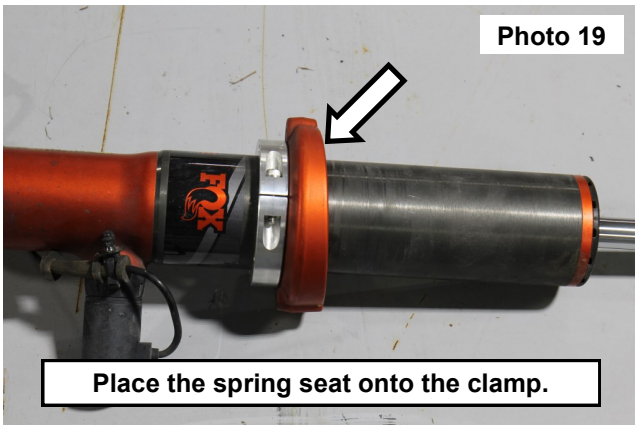


17. Separate the new RC lower retainer clamp and place it around the strut in the OE groove at the bottom of the strut. Secure the clamp using (2) of the supplied 6mm x 30mm bolts. Tighten the clamp keeping the gap in the center of the strut and evenly on each side using a 4mm Allen wrench. **See Photos 17 and 18.**



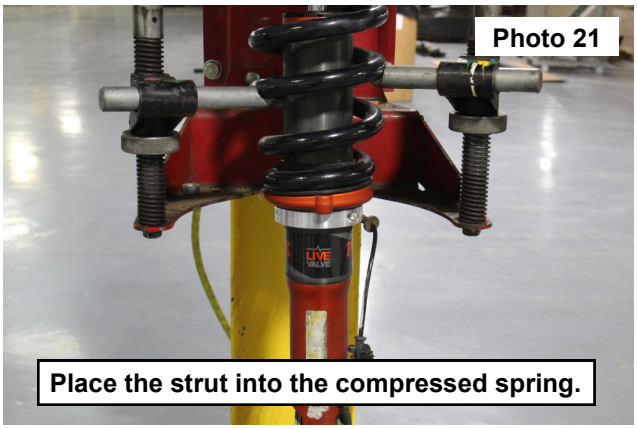


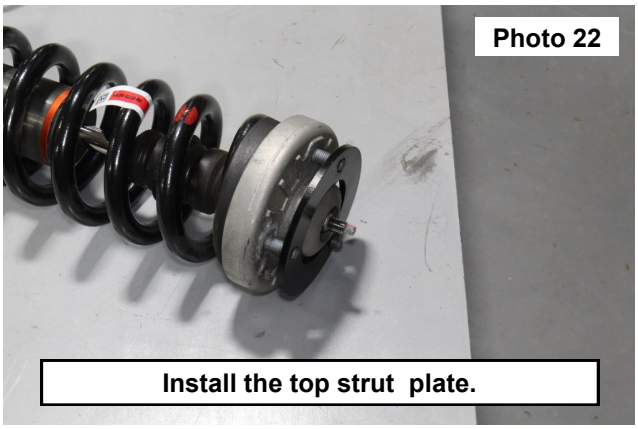
18. Place the spring seat onto the clamp along with the plastic spring retainer. **See Photo 19.**
19. Secure the Live wire to the clamp using (1) of the supplied clamps and (1) 6mm button head bolt. Tighten using a 4mm Allen wrench. **See Photo 20.**



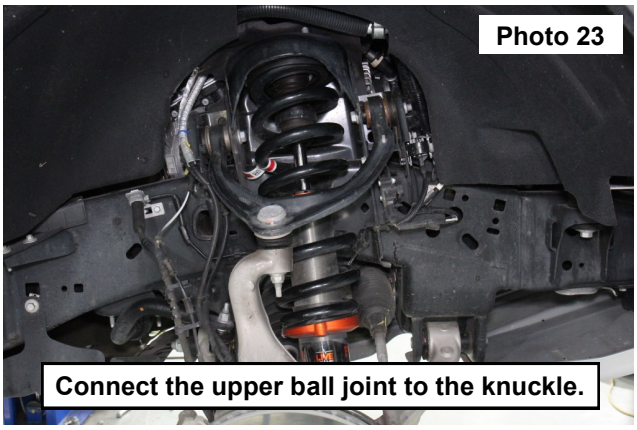


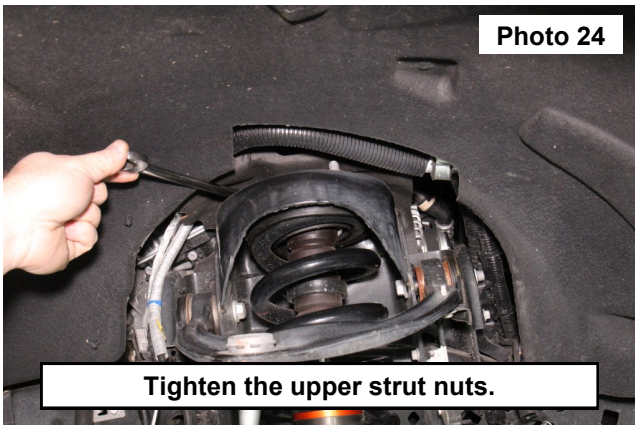
20. Place the strut into the compressed spring and secure the top of the strut using the OE nut. Using the marks, align the strut and tighten the upper strut nut using a 1mm socket. **See Photo 21.**
21. Install top strut plate on top of of the strut after removing strut from strut compressor. **See Photo 22.**
22. Install the strut into the upper frame mount. Secure using the OE nuts. Hand tighten at this time.
23. Connect the lower strut to the control arm using the OE bolt.
24. Connect the sway link to the sway bar using the OE hardware.





25. Install the axle nut using OE hardware tighten using a ratchet and a 13mm socket..
26. Connect the upper control arm to the knuckle using the OE nut. Tighten using a 18mm wrench. **See Photo 23.**
27. Tighten the upper strut nuts using a 18mm wrench. **See Photo 24.**

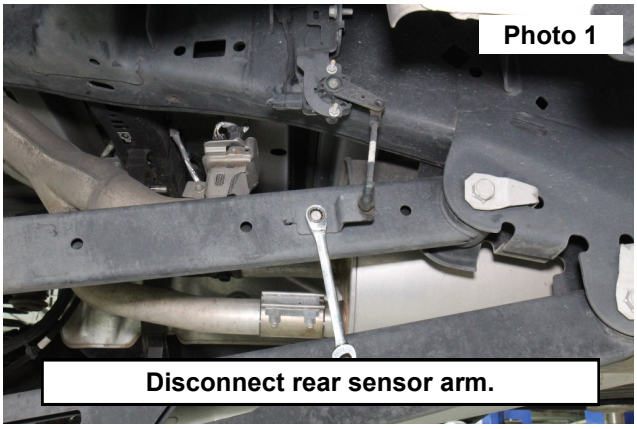


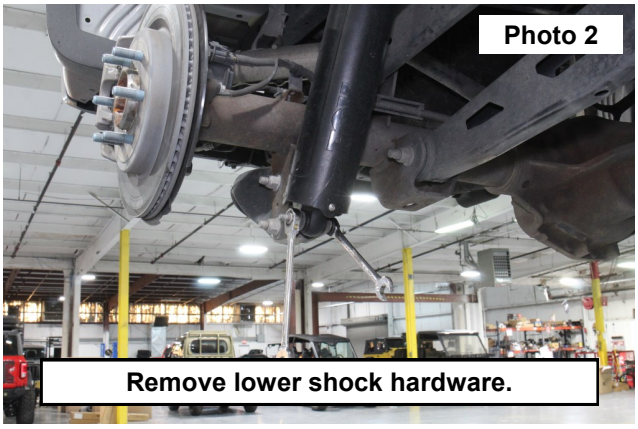


28. Install the abs lines to the knuckle.
29. Install the wheels and tires onto the vehicle and lower to the ground. Then tighten the lower strut bolt to the control arm using a 30mm socket and a 1”-1/16” wrench.
30. Connect the plugs from power steering rack.
31. Connect the ride position sensor.

REAR INSTALLATION INSTRUCTIONS

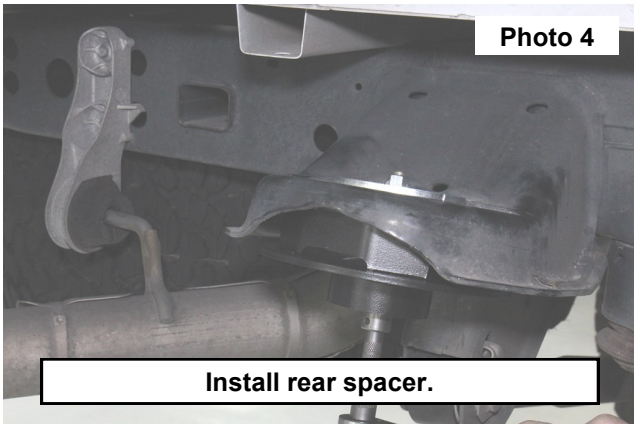
1. Place the vehicle on a level surface and chock the front wheels.
2. Jack up the rear of the vehicle and support with jack stands on the frame rail.
3. Remove the front wheels and tires.
4. Remove the rear suspension sensor arm with an 11mm wrench. Retain hardware for reuse. See Photo 1.
5. Remove rear lower shock bolt with a 15mm and 18mm wrench. Retain hardware for reuse. See Photo 2.



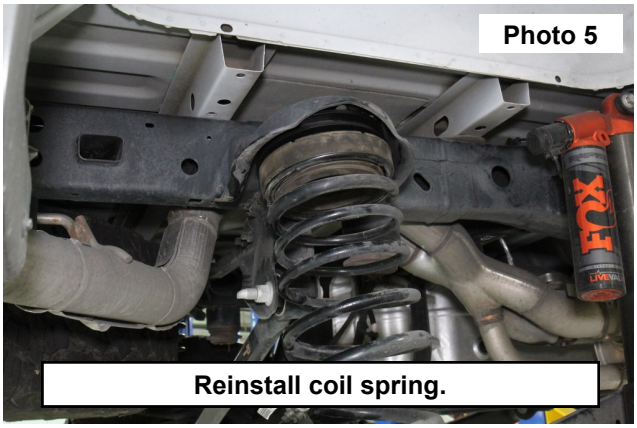


6. Remove rear coil spring with the spring isolator. See Photo 3.
7. Install the upper spacer using the supplied 3/8” bolt, flat washer, and spacer plate. Tighten with a 9/16” socket. See Photo 4.





8. Reinstall coil spring and isolator. See Photo 5.
9. Reinstall rear shock using factory hardware. Tighten with a 15mm and 18mm wrench.
10. Reinstall rear suspension sensor arm using the factory hardware. Tighten with an 11mm wrench.
11. Reinstall rear wheels and lower vehicle to the ground.



POST INSTALLATION INSTRUCTIONS

1. Check all fasteners for proper torque. Check to ensure for adequate clearance between all rotating, mobile, fixed, and heated members. Verify clearance between exhaust and brake lines, fuel lines, fuel tank, floorboards, and wiring harness.
2. Perform steering sweep to ensure front brake hoses have adequate slack and do not contact any rotating, mobile, or heated members. Inspect rear brake hoses at full extension for adequate slack. Failure to perform hose check/ replacement may result in component failure.
3. On some vehicles, the front lower skirting will need to be trimmed if using certain wheel/tire combinations and with heavy offset wheels. Trim only as needed.
4. Activate four wheel drive system and check front hubs for engagement.
5. Have a qualified alignment center align the vehicle immediately. Realign to factory specifications.
6. Perform head light check and adjustment to proper settings.
7. Check and retighten wheels at 50 miles and again at 500 miles
8. All kit components must be retightened at 500 miles and then every 300 miles after installation. Periodically check all hardware for tightness.
9. Install “Warning to Driver” decal on sun visor.

NOTE: Installation of larger tires will require speedometer recalibration.



By purchasing any item sold by Rough Country, LLC, the buyer expressly warrants that he/she is in compliance with all applicable, State, and Local laws and regulations regarding the purchase, ownership, and use of the item. It shall be the buyers responsibility to comply with all Federal, State and Local laws governing the sales of any items listed, illustrated or sold. The buyer expressly agrees to indemnify and hold harmless Rough Country, LLC for all claims resulting directly or indirectly from the purchase, ownership, or use of the items.